

APR 13 2006

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18

Application Number	10/616,668
Filing Date	July 9, 2003
First Named Inventor	Bruce G. Johnson
Art Unit	2853
Examiner Name	TRAN, Ly T.

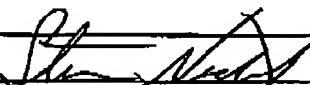
Attorney Docket Number

10012473-3

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April 13, 2006

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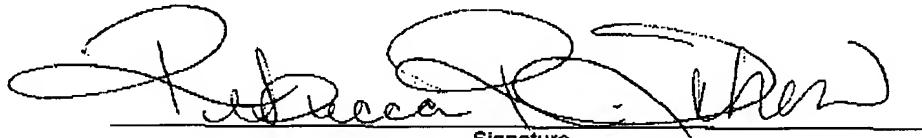
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Application No.: 10/616,668

Attorney Docket No.: 10012473-3

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HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
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PATENT APPLICATION

ATTORNEY DOCKET NO. 10012473-3IN THE  
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Bruce G. Johnson

Confirmation No.: 2599

Application No.: 10/616,668

Examiner: TRAN, Ly T.

Filing Date: July 9, 2003

Group Art Unit: 2853

Title: Inkjet Printing System with an Intermediate Transfer Member Between the Print Engine and Print Medium

Mail Stop Appeal Brief-Patents  
Commissioner For Patents  
PO Box 1450  
Alexandria, VA 22313-1450TRANSMITTAL OF APPEAL BRIEFTransmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on February 13, 2006.  
The fee for filing this Appeal Brief is (37 CFR 1.17(c)) \$500.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

 (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d)) for the total number of months checked below: 1st Month  
\$120 2nd Month  
\$450 3rd Month  
\$1020 4th Month  
\$1590 The extension fee has already been filed in this application. (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.Please charge to Deposit Account 08-2025 the sum of \$ 500. At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 Inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees. A duplicate copy of this sheet is enclosed. I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to:  
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Typed Name: Rebecca R. Schow

Signature: Rebecca R. Schow

Respectfully submitted,

Bruce G. Johnson

By: Steven L. Nichols  
Steven L. Nichols

Attorney/Agent for Applicant(s)

Reg No. : 40,326

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APR 13 2006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Patent Application of:

Bruce G. Johnson

Application No. 10/616,668

Filed: July 9, 2003

For: Inkjet Printing System with an  
Intermediate Transfer Member Between  
the Print Engine and Print Medium

Group Art Unit: 2853

Examiner: TRAN, Ly T.

APPEAL BRIEF

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This is an Appeal Brief under Rule 41.37 appealing the final decision of the Primary Examiner dated November 15, 2005. Each of the topics required by Rule 41.37 is presented herewith and is labeled appropriately.

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**I. Real Party in Interest**

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

**II. Related Appeals and Interferences**

There are no appeals or interferences related to the present application of which the Appellants are aware.

**III. Status of Claims**

Claims 33 and 37-41 and 43-58 are currently pending for further action. Claims 53-58 have been allowed. Claims 33, 37-41 and 43-52 stand finally rejected. Appellant appeals from the final rejection of claims 33, 37-41 and 43-52. All pending claims are presented in the Appendix.

**IV. Status of Amendments**

No amendments have been filed subsequent to the final Office Action of November 15, 2005

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### V. Summary of Claimed Subject Matter

In an inkjet printer, the image is developed by ejecting ink droplets from the inkjet print head onto a sheet of print medium, typically paper. Regardless of the precise method used to expel the ink from the inkjet print head, the ink or toner is dissolved in a liquid carrier. (Applicant's specification, paragraph 0004). The carrier facilitates the transfer of the ink from the print head to the print medium. However, the carrier must eventually be evaporated or absorbed by the print medium in order to fix the printed image to the print medium. (Applicant's specification, paragraph 0005). Unfortunately, the carrier fluid may cause the print medium to swell or deform. This is particularly true if the carrier fluid is absorbed by the print medium, but also occurs if the carrier fluid is evaporated from the print medium. This localized swelling of the print medium fibers is a phenomenon known as "cockle." (Applicant's specification, paragraph 0006).

The present application addresses these issues by using a transfer belt between the inkjet print head and the final print medium. As shown in Fig. 1, a transfer belt (104) is stretched between two upper rollers (109) and runs between two lower rollers (106). This belt (104) is used to receive an image printed by the print head (108) and then transfer that image to the final print medium (103). (Applicant's specification, paragraph 0026). By printing to the transfer belt (104) first and then transferring the image (105) to the print medium (103), additional time is provided during which the carrier fluid of the ink deposited by the print head (108) can evaporate. Consequently, when the image (105) is transferred to the print medium (103), less carrier fluid remains than if the image had been printed directly to the print medium (103). (Applicant's specification, paragraph 0033).

This advantage is maximized by adding heat and using a belt that absorbs carrier fluid. As shown in Fig. 6, when the image (105) has been printed on the belt (104), the belt (104)

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advances in the direction shown by arrow "B." Heating elements (200) are provided along the path of the belt (104) to heat the belt (104) and the print zone. As the printed image (105) passes the heaters (200) and passes through the heated zone, a significant amount of the carrier fluid in the ink of the image (105) will evaporated due to the elevated temperature. The amount of evaporation can be controlled by controlling the speed of the belt (104) past the heaters (200) and the temperature of the heaters. (Applicant's specification, paragraph 0063). Additionally, the belt (104) may be of a material that will, to some extent, absorb carrier fluid so that less carrier fluid is eventually transferred to the print medium (103). (Applicant's specification, paragraph 0065). These measures maximize the advantages of using the transfer belt and minimize the problems associated with print medium cockle. (Applicant's specification, paragraph 0066).

To further promote the advantageous use of a transfer belt, the ink of the image printed on the transfer belt is electrically charged to facilitate transfer of the image from the belt to the final print medium. For example, the use of a negative bias charge would assist in the complete transfer of the image. (Applicant's specification, paragraphs 0059 and 0081).

#### VI. Grounds of Rejection to be Reviewed on Appeal

Claims 33, 38-41 and 51 were rejected under 35 U.S.C. § 102(b) as anticipated by EP 530627 to Takei ("Takei"). While not explicitly stated in the final Office Action, Applicant notes that the same rejection is also applied in the text of the Action to claims 43-46, 49 and 52.

Claims 37, 47, 48 and 50 were rejected as unpatentable under 35 U.S.C. § 103(a) over the teachings of Takei taken alone.

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Consequently, the issues presented on this appeal are:

- (1) Whether claims 33, 38-41, 43-46, 49, 51 and 52 are patentable over Takei.
- (2) Whether claims 37, 47, 48 and 50 are patentable over Takei taken alone.

## VII. Argument

### Claim 44:

Independent claim 44 recites:

An inkjet printing system comprising:  
ink comprising a carrier fluid and having an electrical charge;  
an inkjet print head using said ink for printing images on a transfer member  
that is adjacent to said print head and moveable with respect to said print head; and  
said transfer member disposed to transfer said images to a print medium;  
*wherein said electrical charge facilitates transfer of said images to the print medium.*  
(emphasis added).

In contrast, Takei does not teach or suggest the claimed inkjet printing system in which an electrical charge in the ink facilitates transfer of an ink image from a transfer member to a print medium. To the contrary, Takei only teaches an electrical charge that causes the image to adhere *more strongly* to the transfer member rather than facilitating the transfer to the print medium.

In this regard, the final Office Action alleges that Takei teaches an electrical charge that causes the ink transfer onto the recording medium at col. 10, lines 1-10. (Action of 11/15/05, p. 6). This is exactly the opposite of what Takei actually says. The cited portion of Takei reads:

This embodiment has an advantage in that solvent can be transferred effectively without disturbance of the recording image because the solvent recovery belt 64 contacts the transfer drum 51 with a very low line pressure. Of course, the coloring particles will remain on the transfer drum 51 due to the electric field between transfer drum 51 and electrode 69.  
(Takei, col. 10, lines 3-9).

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Thus, according to Takei, “the coloring particles will remain on the transfer drum 51 due to the electric field between transfer drum 51 and electrode 69.” (Takei, col. 10, lines 7-9) (emphasis added).

Takei does not ever teach or suggest an electrical charge that “*facilitates* transfer of said images to the print medium” as recited in claim 44. (emphasis added).

“A claim is anticipated [under 35 U.S.C. § 102] only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). See M.P.E.P. § 2131. For at least this reason, the rejection of claim 44 and its dependent claims based on Takei should be reconsidered and withdrawn.

**Claim 33:**

Independent claim 33 recites:

A method of printing with an inkjet printing system, said method comprising: providing a supply of liquid ink comprising a carrier fluid; using said ink, printing an image with an inkjet print head on a transfer belt that is adjacent to said print head and moveable with respect to said print head; absorbing carrier fluid from ink of said image with said transfer belt; heating said transfer belt to facilitate removal of said carrier fluid from said image on said transfer belt; and transferring said printed image from said transfer belt to a sheet of print medium.

In contrast, Takei fails to teach or suggest heating a transfer belt that absorbs carrier fluid to facilitate removal of the carrier fluid from an image on the transfer belt. In Takei’s Fig. 2 and the corresponding text, a belt (11) is taught that includes a “water absorbing layer.” (Takei, col. 4, lines 55-58). However, Takei does not ever teach or suggest heating the belt (11) as recited in claim 33.

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In this regard, the final Office Action refers to Takei at Figs. 3 and 4. (Action of 1115/05, p. 6). In Figs. 3 and 4 and the related text, Takei teaches a heating element (27) for heating a transfer *drum* (21). Takei does not, however, teach or suggest "heating [a] transfer *belt*" as claimed. (emphasis added). There is no teaching or suggestion in Takei that a transfer belt can or should be heated.

Takei only teaches heating a transfer drum for the purpose of filling a solvent "recovering tank" (26). (See, Takei, col. 5, lines 35-43 and col. 6, lines 8-19). Such a "recovering tank" is not used or taught in connection with the belt (11) of Takei's Fig. 2. Thus, Takei does not teach or suggest any reason for heating a transfer belt, as opposed to a transfer drum. Moreover, the final Office Action fails to indicate how or where Takei teaches or suggests heating a transfer belt, as opposed to a transfer drum used with a solvent recovering tank. To the contrary, one of skill in the art would likely conclude that Takei teaches away from the claimed heating of a transfer belt because Takei only teaches heating a transfer drum.

"A claim is anticipated [under 35 U.S.C. § 102] only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). See M.P.E.P. § 2131. For at least this reason, the rejection of claim 33 and its dependent claims based on Takei should be reconsidered and withdrawn.

**Claim 43:**

Additionally, the various dependent claims in this application recite subject matter that is neither taught nor suggested by Takei. For example, claim 43 depends from claim 33 and recites "providing said supply of liquid ink comprising a carrier fluid with an electrical

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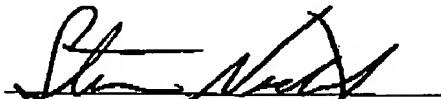
charge, wherein said electrical charge facilitates transfer of said images to the print medium." As demonstrated above with respect to claim 44, Takei fails to teach or suggest such subject matter. For at least this additional reason, the rejection of claim 43 should be reconsidered and withdrawn.

**Claims 37, 47, 48 and 50:**

Dependent claims 37, 47, 48 and 50 were rejected as unpatentable under 35 U.S.C. § 103(a) over the teachings of Takei taken alone. This rejection is respectfully traversed for at least the same reasons given above with respect to independent claims 33 and 44.

In view of the foregoing, it is submitted that the final rejection of the pending claims is improper and should not be sustained. Therefore, a reversal of the Final Rejection of November 15, 2005 is respectfully requested.

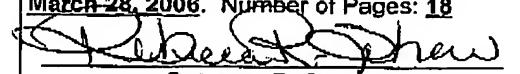
Respectfully submitted,



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DATE: April 13, 2006

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 Rebecca R. Schow	

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VIII. CLAIMS APPENDIX

1 - 32. (cancelled)

33. (previously presented) A method of printing with an inkjet printing system, said method comprising:

providing a supply of liquid ink comprising a carrier fluid;

using said ink, printing an image with an inkjet print head on a transfer belt that is adjacent to said print head and moveable with respect to said print head;

absorbing carrier fluid from ink of said image with said transfer belt;

heating said transfer belt to facilitate removal of said carrier fluid from said image on said transfer belt; and

transferring said printed image from said transfer belt to a sheet of print medium.

34-36. (cancelled)

37. (previously presented) The method of claim 33, wherein said printing an image further comprises moving said inkjet print head with respect to said transfer member.

38. (previously presented) The method of claim 33, wherein said printing an image further comprises printing a line of said image at a time, said inkjet print head being a page-width array.

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39. (previously presented) The method of claim 33, further comprising cleaning said transfer member after transfer of said image to said sheet of print medium.

40. (previously presented) The method of claim 33, further comprising facilitating transfer of an image from said transfer member to said sheet of print medium with a pinch roller.

41. (previously presented) The method of claim 33, further comprising delaying transfer of said image from said transfer member to said sheet of print medium to allow evaporation of carrier fluid from ink of said image.

42. (cancelled)

43. (previously presented) The method of claim 33, further comprising providing said supply of liquid ink comprising a carrier fluid with an electrical charge, wherein said electrical charge facilitates transfer of said images to the print medium.

44. (previously presented) An inkjet printing system comprising:  
ink comprising a carrier fluid and having an electrical charge;  
an inkjet print head using said ink for printing images on a transfer member that is adjacent to said print head and moveable with respect to said print head; and  
said transfer member disposed to transfer said images to a print medium;  
wherein said electrical charge facilitates transfer of said images to the print medium.

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45. (previously presented) The system of claim 44, wherein said transfer member comprises a transfer belt.

46. (previously presented) The system of claim 44, wherein said transfer member comprises a drum.

47. (previously presented) The system of claim 44, wherein said inkjet print head is moveable with respect to said transfer member.

48. (previously presented) The system of claim 44, further comprising a cleaning roller for cleaning said transfer member.

49. (previously presented) The system of claim 44, further comprising a pinch roller for facilitating transfer of an image from said transfer member to said sheet of print medium.

50. (previously presented) The system of claim 44, further comprising at least one heating element for heating said transfer member.

51. (previously presented) The method of claim 33, wherein said method does not include applying a charge to a surface of said carrier fluid on said transfer member.

52. (previously presented) The method of claim 43, wherein said ink has said electrical charge when ejected from said inkjet print head.

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53. (previously presented) A method of printing with an inkjet printing system, said method comprising:

printing an image with an inkjet print head on a transfer member that is adjacent to said print head and moveable with respect to said print head;

moving said transfer member so as to move said image from said print head to a transfer position at which said image is transferred from said transfer member to a sheet of print medium;

evaporating some of a carrier fluid from said image as said transfer member moves between said inkjet print head and said transfer position;

transferring said image from said transfer member to a sheet of print medium; and

adjusting a speed of movement of said transfer member to maximize evaporation of said carrier fluid.

54. (previously presented) The method of claim 53, further comprising providing a transfer belt as said transfer member.

55. (previously presented) The method of claim 54, further comprising absorbing carrier fluid from ink of said image with said transfer belt.

56. (previously presented) The method of claim 53, further comprising providing a drum as said transfer member.

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57. (previously presented) The method of claim 53, further comprising cleaning said transfer member after transfer of said image to said sheet of print medium.

58. (previously presented) The method of claim 53, further comprising heating said transfer member.

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**IX. Evidence Appendix**

None

**X. Related Proceedings Appendix**

None

**XI. Certificate of Service**

None